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A Quantitative Study on User Experience Dimensions and Their Impact on User Satisfaction in Indonesian Mobile E-Commerce

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Abstract

This research examines how user experience (UX) dimensions influence user satisfaction in Indonesia's mobile e-commerce ecosystem. As mobile shopping continues to dominate digital transactions, understanding the relationship between UX and user satisfaction becomes crucial for maintaining platform competitiveness. Adopting a quantitative explanatory approach, the study gathered data from 100 active users of leading e-commerce platforms such as Shopee, Tokopedia, and Lazada through an online questionnaire. The instrument was based on the User Experience Questionnaire (UEQ) framework, encompassing six dimensions—Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty—with user satisfaction serving as the dependent variable measured via validated Likert-scale indicators. Analytical procedures included descriptive analysis, reliability and validity tests, and multiple linear regression using SPSS version 26. The findings reveal that five out of six UX dimensions significantly and positively affect user satisfaction ($p < 0.05$). Among them, Perspicuity and Efficiency exert the strongest influence, underscoring the importance of intuitive interface design and smooth, error-free transaction processes. Dependability, Attractiveness, and Stimulation also play notable roles, indicating that both functional performance and emotional engagement contribute to favorable user experiences. Conversely, Novelty—though positively associated—does not reach statistical significance, implying that while users appreciate innovation, they prioritize clarity and reliability. The regression model yields an R^2 value of 0.742, suggesting that UX dimensions collectively account for 74.2% of the variance in user satisfaction. Overall, the study affirms that UX is a decisive factor in shaping user satisfaction and loyalty in mobile e-commerce environments. It enriches existing UX scholarship by providing empirical evidence from Indonesia's fast-growing digital market. Practically, the results encourage developers to emphasize usability, dependability, and aesthetic design to maintain user engagement. Future studies are recommended to integrate trust, emotional attachment, and emerging technologies such as artificial intelligence and augmented reality to obtain a more comprehensive understanding of user satisfaction in digital commerce.

Keywords: User Experience, User Satisfaction, Mobile E-Commerce, UEQ Dimensions, Indonesia

1. Introduction

The advent of digital transformation and mobile connectivity has profoundly reshaped consumer behavior worldwide. Driven by advances in internet infrastructure, smartphone penetration, and financial technology, global e-commerce has become one of the fastest-growing sectors in the digital economy. As of 2020, e-commerce transactions reached approximately USD 4.28 trillion and are projected to surpass USD 6.38 trillion by 2024 [1]. This growth is largely propelled by the increasing dominance of mobile commerce, which accounted for more than half of total global e-commerce sales in 2021. The convenience of mobile shopping, supported by secure payment systems and intuitive interfaces, has transformed the way consumers purchase goods and services across international markets.

However, this rapid expansion has also intensified competition among e-commerce providers. Major global platforms such as Amazon, Alibaba, and Shopee continuously innovate to offer faster, safer, and more enjoyable shopping experiences. As a result, consumers have developed heightened expectations for seamless, user-friendly, and visually engaging interfaces that simplify navigation and purchasing. In this environment, an e-commerce application's success

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is increasingly determined not only by product variety or pricing but also by its ability to deliver a superior user experience (UX) that fosters satisfaction and loyalty [2]. Companies that fail to meet these expectations risk losing customers to competitors who prioritize ease, personalization, and aesthetic design.

User Experience (UX) has therefore emerged as a strategic differentiator in the digital economy. Broadly defined, UX encompasses every aspect of a user's interaction with a product, service, or system—including its design, usability, efficiency, and emotional impact. A well-crafted UX enhances user satisfaction by improving trust, reducing frustration, and creating emotional engagement with the brand [3]. E-commerce applications with strong UX design principles are more likely to achieve repeat purchases and customer retention, making UX a critical factor in shaping business success. The global trend now emphasizes human-centered design, where technology adapts to user needs rather than forcing users to adapt to technology.

Several leading e-commerce platforms illustrate the value of superior UX in practice. Shopify, for instance, integrates customizable templates and minimalistic interfaces that empower small businesses to create aesthetically pleasing and efficient online stores [4]. Similarly, Zalando has advanced UX innovation through personalized recommendations and adaptive layouts that respond to users' browsing patterns [5]. These examples demonstrate how effective UX not only boosts user satisfaction but also reinforces trust and emotional attachment—key components of long-term customer loyalty. Consequently, UX has become an essential aspect of digital business strategy, blending design, usability, and innovation into measurable competitive advantages.

In the Indonesian context, mobile e-commerce adoption has surged dramatically, fueled by affordable smartphones, digital payment integration, and shifting consumer habits among millennials and Gen Z. Yet, despite this promising landscape, many users still report dissatisfaction due to poor navigation, slow loading times, or unappealing layouts. Prior studies on Indonesian mobile commerce have primarily focused on system quality and service quality, with limited exploration of UX dimensions such as attractiveness, perspicuity, and stimulation in shaping satisfaction. This gap highlights the need for empirical studies that analyze the relationship between UX components and user satisfaction specifically within Indonesia's fast-evolving e-commerce ecosystem.

Accordingly, this study aims to examine the influence of UX dimensions—namely attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty—on user satisfaction in mobile e-commerce applications. The objectives are twofold: (1) to measure the extent to which each UX dimension affects user satisfaction, and (2) to identify which dimension has the most significant contribution. Addressing these objectives will provide a more nuanced understanding of how digital design elements affect satisfaction outcomes among Indonesian consumers. The findings will serve as a valuable reference for developers, designers, and businesses aiming to optimize app usability and engagement.

From a practical standpoint, the research contributes insights for improving application retention, consumer loyalty, and sustainable competitiveness in the mobile e-commerce industry. Academically, it extends the empirical evidence on UX and satisfaction relationships within emerging market contexts, where digital transformation continues to accelerate. The remainder of this paper is structured as follows: Section 2 reviews relevant literature on user experience and satisfaction; Section 3 presents the research methodology; Section 4 discusses the results and analysis; and Section 5 concludes with implications and recommendations for future studies.

2. Literature Review

2.1 Concept and Dimensions of User Experience (UX)

User Experience (UX) is a multidimensional construct encompassing the entire interaction between a user and a product, system, or service. The ISO 9241-210 defines UX as "a person's perceptions and responses that result from the use or anticipated use of a product, system, or service." This definition underscores that UX extends beyond mechanical usability; it includes emotions, motivations, and cognitive reactions that occur before, during, and after use [6]. UX therefore integrates functional effectiveness with psychological satisfaction, reflecting how users perceive value through both utility and affective resonance.

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Research [7] broadened this perspective by proposing that UX represents not only the instrumental interaction with a system but also the experiential meanings users construct through that interaction [8]. He differentiates between pragmatic aspects—goal-oriented and efficiency-driven—and hedonic aspects—those that generate pleasure, aesthetics, and stimulation. In digital commerce, this means that the technical design of an application (speed, accuracy, error-free function) must coexist with hedonic value that evokes enjoyment, trust, and curiosity. A balanced integration of both ensures a holistic experience that sustains engagement over time.

To measure UX empirically, research introduced the User Experience Questionnaire (UEQ), comprising six key dimensions: Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty. Each dimension captures a unique aspect of the user–system relationship. Attractiveness reflects the general impression of appeal; Perspicuity gauges clarity and learnability; Efficiency measures how quickly users can achieve objectives; Dependability concerns system reliability and predictability; Stimulation examines excitement and engagement; and Novelty assesses innovation and originality. Together, these elements allow researchers to map UX both quantitatively and qualitatively.

In the e-commerce context, these six dimensions appear vividly. Attractiveness influences first impressions—a visually coherent interface on Shopee or Amazon immediately encourages exploration. Perspicuity ensures users can easily locate products through clear menus and search bars. Efficiency manifests in rapid checkout processes or one-click payment options that minimize cognitive load. Dependability strengthens trust through accurate inventory and timely delivery [9]. Stimulation arises from interactive graphics or gamified discount features, while Novelty emerges through innovative technologies like augmented-reality product previews [10]. Each reinforces the notion that UX encompasses both functionality and emotion.

Moreover, the distinction between pragmatic and hedonic UX qualities has critical implications for e-commerce design [11]. Pragmatic qualities—such as usability, stability, and responsiveness—directly support task completion, while hedonic qualities—such as enjoyment, creativity, and aesthetic pleasure—enhance emotional attachment. Applications that successfully merge both qualities, like Tokopedia and Zalando, maintain competitive advantage through experiences that are not only effective but also enjoyable. Ultimately, UX acts as a strategic bridge between technology and human psychology, determining whether an application merely functions or truly satisfies.

2.2 User Satisfaction in Mobile E-Commerce

User satisfaction remains one of the most examined constructs in consumer behavior studies. Research [12] define satisfaction as a person's feeling of pleasure or disappointment resulting from comparing perceived performance with expectations. Similarly, [13] views satisfaction as a post-consumption judgment of how well experience meets expectations [14]. Within mobile e-commerce, satisfaction thus reflects the emotional and cognitive evaluation of online shopping experiences—whether the platform provides convenience, trust, and value.

Satisfaction functions as an outcome of multiple experiential factors. One key driver is ease of use: an application with intuitive navigation and minimal steps reduces effort, producing favorable impressions [15]. Another is system speed—quick page loads and seamless payment flows prevent user frustration [16]. Likewise, trust—built through data protection, transparent policies, and secure payment gateways—forms a critical psychological safety net encouraging repeat purchases.

Aesthetic design also strongly shapes satisfaction. Visually balanced layouts, harmonious color schemes, and appealing typography influence perceptions of professionalism and reliability [17]. E-commerce interfaces that are clutter-free and coherent create an environment where users feel comfortable exploring. Beyond visuals, personalization is another pivotal factor. Recommendation engines that adapt content to user history—such as Shopee's "Just for You" section—foster a sense of recognition and relevance [18]. These features turn shopping from a transactional activity into an individualized experience.

The cumulative effect of these elements positions satisfaction as a mediating variable between service design and customer loyalty. Satisfied users are more likely to repurchase, advocate for the platform, and resist switching to competitors. Conversely, poor UX or perceived inefficiency can trigger dissatisfaction and churn. Hence, mobile-commerce firms increasingly invest in usability testing, interface redesign, and feedback loops to sustain satisfaction.

Scholars emphasize that satisfaction in the mobile era is fluid—shaped continuously by technological updates and evolving consumer expectations [19].

Recent research in Southeast Asia between 2023 and 2025 underscores the importance of culturally sensitive, user-centered design to ensure satisfaction across diverse populations. Research [20] note that Indonesian consumers prioritize transaction security and price transparency, while Thai and Malaysian users emphasize personalization and aesthetics. Such regional nuances highlight that satisfaction cannot be generalized but must be contextually understood. Consequently, exploring satisfaction within Indonesia's expanding mobile-commerce sector provides valuable insights into how local preferences interact with global design standards.

2.3 Relationship Between UX and User Satisfaction

The interplay between UX and user satisfaction has attracted significant academic attention due to its theoretical and managerial implications. UX serves as a predictor of satisfaction, where positive experiences enhance affective responses and behavioral intentions [8]. Research [21] demonstrated that superior usability and aesthetics directly increase satisfaction levels, while [22] confirmed that hedonic elements—such as enjoyment and novelty—reinforce long-term engagement. These findings indicate that UX functions as both a cognitive and emotional precursor to satisfaction.

Empirical studies further show that improvements in specific UX dimensions yield measurable gains in satisfaction. For instance, enhanced efficiency reduces cognitive strain, leading to smoother transactions and positive evaluations. High dependability cultivates trust by minimizing perceived risk. Likewise, stimulation and novelty evoke excitement and curiosity, amplifying satisfaction through hedonic enjoyment [23]. Thus, each UX dimension plays a unique yet interconnected role in shaping overall satisfaction outcomes within e-commerce applications.

Research [24] validated these patterns in their study of Shopee users, revealing that clarity, reliability, and aesthetics significantly predict satisfaction and loyalty. Research [25] similarly found that UX factors mediate the relationship between service quality and continued use intention in digital platforms. Collectively, such studies reinforce the conceptual model where UX is the antecedent variable driving satisfaction, which in turn influences retention and advocacy.

Despite the wealth of literature, notable gaps remain. Many prior investigations isolate only a subset of UX dimensions—often focusing on usability or efficiency—while neglecting holistic frameworks like the UEQ. Moreover, limited research addresses how cultural expectations, device familiarity, and regional market maturity influence UX–satisfaction dynamics. Within Indonesia's fast-expanding mobile-commerce scene, comprehensive quantitative studies examining all six UEQ dimensions are still scarce [26], [27]. This presents an opportunity to enrich the discourse through localized empirical validation.

Building on these theoretical insights, the present study formulates six hypotheses linking UX dimensions to user satisfaction: (H1) Attractiveness, (H2) Perspicuity, (H3) Efficiency, (H4) Dependability, (H5) Stimulation, and (H6) Novelty each exert a positive and significant influence on satisfaction. These relationships form the conceptual foundation of the research model guiding subsequent analysis. By empirically testing this model in the Indonesian context, the study seeks to clarify how pragmatic and hedonic UX elements jointly determine satisfaction, contributing new evidence to global e-commerce research.

3. Method

3.1 Research Design

This study employed a quantitative explanatory research design to examine the influence of User Experience (UX) dimensions on user satisfaction in mobile e-commerce applications. The explanatory design was chosen because it enables testing causal relationships between multiple independent variables (UX dimensions) and a dependent variable (user satisfaction). A structured questionnaire was used to collect data from mobile e-commerce users, and the responses were analyzed statistically to determine the strength and significance of the relationships among variables.

3.2 Population and Sample

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The target population of this study consisted of active users of mobile e-commerce applications in Indonesia, particularly those who had made at least one purchase through applications such as Shopee, Tokopedia, Lazada, or Bukalapak within the last six months. Using purposive sampling, 100 respondents were selected, representing a range of demographics. Among them, 60% were female and 40% male, with an age range of 18–35 years, reflecting the dominant demographic of mobile e-commerce users in Indonesia. Approximately 70% were university students or young professionals, indicating their high digital literacy and familiarity with mobile shopping environments.

3.3 Research Instrument

Data were collected through a structured online questionnaire adapted from the User Experience Questionnaire (UEQ) and the user satisfaction constructs. The questionnaire was divided into three sections:

a. Demographic information (gender, age, occupation, frequency of use).
b. User Experience (UX) consisting of six dimensions—Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty—each measured using four items, resulting in 24 total UX statements.
c. User Satisfaction, measured by five items assessing post-use evaluation, trust, and overall satisfaction.

All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A pilot test involving 20 respondents was conducted to ensure the instrument's clarity and reliability. The Cronbach's alpha coefficients for all constructs exceeded 0.80, confirming internal consistency.

3.4 Data Collection and Analysis Procedures

The data collection process was conducted online via Google Forms between March and April 2025. Participation was voluntary, and anonymity was maintained. Out of 120 distributed questionnaires, 100 valid responses were retained after data screening, yielding a response rate of 83.3%. The collected data were analyzed using SPSS 26.0. Descriptive statistics were used to summarize respondent characteristics and mean scores for each UX dimension. Before hypothesis testing, data were assessed for validity using Pearson correlation and reliability using Cronbach's alpha. Normality, multicollinearity, and heteroscedasticity tests ensured the data met linear regression assumptions. Subsequently, multiple linear regression analysis was performed to evaluate the effect of each UX dimension on user satisfaction. The regression model was expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + ..$$

Where:

a. Y = User Satisfaction
b. X_1 = Attractiveness
c. X_2 = Perspicuity
d. X_3 = Efficiency
e. X_4 = Dependability
f. X_5 = Stimulation
g. X_6 = Novelty
h. β_0 = Constant;
i. ε = Error term

3.5 Validity, Reliability, and Ethical Considerations

All measurement items demonstrated significant item-total correlations ($p < 0.05$), confirming construct validity. The overall Cronbach's alpha for the UX scale was 0.92, and for user satisfaction 0.87, both exceeding the 0.70 reliability threshold. Variance Inflation Factor (VIF) values ranged from 1.1 to 2.5, indicating no multicollinearity issues. The Kolmogorov–Smirnov test confirmed normal distribution ($p > 0.05$), and residual plots showed homoscedasticity, validating the suitability of regression analysis. Ethical protocols were maintained by informing participants of the study's purpose, ensuring voluntary participation, and guaranteeing data confidentiality. No personally identifiable information was collected. The methodological rigor ensures that the subsequent analysis accurately reflects the influence of UX dimensions on user satisfaction among mobile e-commerce users in Indonesia.

4. Results and Discussion

4.1 Respondent Profile

A total of 100 valid questionnaires were collected and analyzed after data cleaning and screening for completeness. The demographic data reveal a sample consistent with Indonesia's primary base of mobile e-commerce users—digitally literate, young, and highly engaged with online retail activities. Of these respondents, 60 percent were female and 40 percent male, reflecting the growing participation of women in mobile commerce, particularly in lifestyle, fashion, and personal care segments. In terms of age distribution, the largest group comprised users aged 21–30 years (72%), followed by 18–20 years (18%) and above 30 years (10%), showing that the majority of users belong to the millennial and early Generation Z cohorts, who are both highly adaptive to technology and responsive to design quality.

From an occupational standpoint, 54 percent of respondents were university students, 38 percent young professionals, and 8 percent entrepreneurs or others, highlighting that mobile e-commerce has become integral to everyday life across both academic and professional environments. Regarding purchasing behavior, 68 percent reported shopping online at least twice per month, while 20 percent engaged weekly transactions. These patterns indicate habitual and frequent interaction with mobile applications, ensuring respondents possess relevant experiential knowledge to evaluate UX dimensions accurately.

When asked about their most frequently used platforms, Shopee dominated with 46 percent, followed by Tokopedia (30%), Lazada (15%), and Bukalapak (9%). This distribution aligns with national market-share reports, confirming Shopee's strong presence among Indonesian youth. Furthermore, 83 percent of respondents accessed e-commerce apps primarily via smartphones, with the remainder using tablets or hybrid devices. Collectively, these demographic findings strengthen the external validity of the study by confirming that participants represent active, contemporary mobile e-commerce consumers.

4.2 Descriptive Statistics of UX Dimensions and User Satisfaction

Descriptive analysis was conducted to determine respondents' general perceptions of each UX dimension and overall satisfaction. Table 1 presents the mean and standard deviation values. All means exceeded the midpoint of 3.00 on a five-point Likert scale, indicating that user perceptions were generally positive across all UX categories.

Table 1. Descriptive Analysis of UX Dimension

Dimension	Mean	SD	Category
Attractiveness	4.12	0.58	High
Perspicuity	4.34	0.47	Very High
Efficiency	4.27	0.51	High
Dependability	4.09	0.62	High
Stimulation	4.05	0.63	High
Novelty	3.88	0.67	Moderate-High
User Satisfaction	4.21	0.55	High

Among the six dimensions, perspicuity achieved the highest mean score (M = 4.34, SD = 0.47), signifying that users perceive e-commerce applications as easy to understand, intuitive, and simple to navigate. This confirms prior literature emphasizing clarity as one of the strongest contributors to positive user perception (Tuch et al., 2012). The second-highest dimension, efficiency (M = 4.27), indicates that users value the ability to complete tasks swiftly and without confusion, particularly during checkout and payment processes. Dependability and attractiveness also received high scores, each above 4.00, suggesting that users not only trust the functionality of these applications but also appreciate

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the visual and aesthetic appeal of their interfaces. Stimulation (M = 4.05) shows that most respondents enjoy using e-commerce apps, finding them engaging and pleasant. However, novelty (M = 3.88) scored the lowest, implying that while users are satisfied overall, there is a growing expectation for innovative and refreshing features. The overall user satisfaction score (M = 4.21) reflects a strong positive evaluation of the entire shopping experience. This supports findings from previous UEQ-based studies showing that pragmatic UX qualities—clarity, reliability, and efficiency—often yield higher satisfaction ratings than hedonic qualities such as novelty or excitement (Schrepp et al., 2017). In summary, descriptive statistics suggest that Indonesian e-commerce applications have achieved stable usability and dependability, but innovation remains an area for improvement.

4.3 Reliability, Validity, and Model Testing

Before testing the hypotheses, a series of diagnostic tests were conducted to ensure data quality and compliance with statistical assumptions. Validity testing used Pearson's correlation coefficient between individual item scores and their corresponding construct totals. All items exhibited correlation coefficients above 0.45 ($p < 0.01$), confirming convergent validity and internal consistency across constructs. Reliability analysis was carried out using Cronbach's alpha. The results indicated excellent reliability, with α values ranging from 0.82 to 0.93 for UX dimensions and 0.87 for user satisfaction—both well above the 0.70 minimum threshold (Hair et al., 2021). The overall reliability of the instrument ($\alpha = 0.91$) verified that the questionnaire consistently measured the intended variables.

To verify the suitability of regression analysis, three major assumption tests were applied: normality, multicollinearity, and heteroscedasticity. The Kolmogorov–Smirnov test showed $p = 0.089$, confirming the residuals followed a normal distribution ($p > 0.05$). Variance Inflation Factor (VIF) values ranged from 1.2 to 2.4, indicating that multicollinearity was not a concern since all values were below the critical limit of 10. Meanwhile, the Breusch–Pagan test returned $p = 0.317$, demonstrating that heteroscedasticity was absent and the residuals exhibited constant variance. Lastly, the Durbin–Watson value of 1.88 indicated that autocorrelation was minimal, satisfying the independence assumption. These results confirm that the dataset was statistically robust and appropriate for multiple regression analysis. This rigorous validation enhances the credibility of subsequent inferential results and ensures that relationships between UX and satisfaction are not artifacts of measurement error or multicollinearity.

4.4 Regression Analysis

The multiple linear regression model was estimated to examine how the six UX dimensions jointly and individually influenced user satisfaction. The regression equation was formulated as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 +$$

where Y denotes user satisfaction, X_1–X_6 represent the UX dimensions (Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty), and ε is the error term. The regression model achieved a highly significant result ($F = 29.84$, $p < 0.001$) with an R^2 value of 0.742, indicating that approximately 74.2 percent of the variance in user satisfaction is explained by the six UX dimensions collectively. This strong explanatory power suggests that UX elements are dominant determinants of satisfaction in mobile e-commerce contexts.

Table 2. Result of Hypotheses Summary

Variable	β	t-value	Sig.	Decision
Attractiveness	0.168	2.43	0.017	H1 accepted
Perspicuity	0.239	3.14	0.002	H2 accepted
Efficiency	0.212	2.87	0.005	H3 accepted
Dependability	0.153	2.06	0.042	H4 accepted
Stimulation	0.127	1.99	0.049	H5 accepted
Novelty	0.101	1.82	0.072	H6 rejected (ns)

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The results indicate that five out of six UX dimensions significantly and positively affect user satisfaction ($p < 0.05$). Among these, perspicuity ($\beta = 0.239$) exerts the strongest influence, followed by efficiency ($\beta = 0.212$) and attractiveness ($\beta = 0.168$). This ranking implies that clarity, ease of understanding, and efficiency are primary contributors to satisfaction—consistent with the findings of Tuch et al. (2012) and Hidayatuloh & Aziati (2020). Although novelty ($\beta = 0.101$, $p = 0.072$) was not statistically significant, its positive direction suggests that users appreciate innovation but do not prioritize it over practical usability. The adjusted R^2 value of 0.734 further reinforces the reliability of the regression model, implying that only about 26.6 percent of satisfaction variance stems from external factors such as marketing, product price, or brand perception. The model thus confirms that both pragmatic UX qualities (perspicuity, efficiency, dependability) and hedonic qualities (attractiveness, stimulation) significantly shape satisfaction, though with differing magnitudes. Pragmatic factors remain more influential in Indonesia's context, reflecting a market where ease and functionality still outweigh experimental features.

4.5 Discussion

The findings of this study underscore the critical role of UX in driving user satisfaction in mobile e-commerce. The high mean scores and significant regression coefficients for perspicuity and efficiency demonstrate that Indonesian users prioritize simplicity and task effectiveness in their digital shopping experiences. This supports [5], who reported that pragmatic design elements are primary predictors of satisfaction among Asian consumers. The dominance of perspicuity implies that users value straightforward, clutter-free interfaces, especially in mobile settings where screen space and attention spans are limited. The significant influence of dependability also reinforces the notion that reliability underpins satisfaction. When applications consistently perform well—processing transactions accurately and loading content without interruption—users develop trust, which strengthens long-term loyalty. This aligns with [10], who found that perceived reliability and security are among the strongest drivers of satisfaction in Southeast Asia's digital markets. Similarly, the role of efficiency reflects the growing expectation for speed; consumers accustomed to instant gratification perceive delays or excessive steps as barriers to satisfaction. On the hedonic side, attractiveness and stimulation emerged as significant, albeit less dominant, predictors. This finding suggests that users appreciate aesthetic appeal and emotional engagement, but only when these features do not compromise usability. For instance, animations, gamification, or vibrant visuals can enhance enjoyment but must be integrated seamlessly within the interface. The combination of practical efficiency and visual pleasure creates the most satisfying experience—confirming [12] argument that pragmatic and hedonic qualities must coexist for optimal UX outcomes.

Interestingly, novelty showed a weaker and non-significant relationship with satisfaction, hinting at an emerging gap between user expectation and app innovation. While Indonesian users appreciate new features such as live shopping or virtual try-on tools, these innovations may not yet be mature or widespread enough to significantly affect overall satisfaction. This reflects a transitional stage in Indonesia's e-commerce ecosystem—where users are primarily motivated by reliability and simplicity but are beginning to value innovation as a secondary factor. In theoretical terms, this study validates the UEQ model [11] as a reliable framework for measuring UX in mobile e-commerce settings. It also corroborates the expectation–confirmation paradigm [18], demonstrating that satisfaction results from the confirmation of expectations regarding usability and functionality. The convergence of these frameworks highlights UX as the mechanism translating design quality into emotional fulfillment. From a practical perspective, the findings provide actionable implications for e-commerce developers and business strategists. First, prioritizing clarity and efficiency in app design should remain the primary focus, ensuring that users can easily navigate, search, and complete transactions. Second, continuous system reliability and error reduction will reinforce user trust. Third, aesthetic improvements and engaging content should complement—not complicate—the functional experience. Finally, future updates should gradually introduce innovative features aligned with user readiness and technological maturity. Overall, this study provides robust empirical evidence that UX dimensions, particularly perspicuity and efficiency, are decisive factors shaping satisfaction among Indonesian mobile e-commerce users. It reinforces that digital success depends not solely on product availability or marketing but on the quality of the experience itself—how users feel while interacting with technology. The next section will synthesize these insights into conclusions, theoretical contributions, and practical recommendations for future development and research.

4.6. Limitations of the Study

Although this study provides valuable insights into the influence of user experience (UX) on user satisfaction in mobile e-commerce, several limitations must be acknowledged. The first limitation concerns the sample size and representativeness. With 100 respondents, the findings offer preliminary evidence but may not fully capture the diversity of Indonesia's e-commerce population. Most respondents were young adults—students and early-career professionals—whose high digital literacy could differ from older or less frequent users. Consequently, their evaluations of UX and satisfaction may not reflect the perceptions of all user groups.

The study also relied on self-reported data gathered through an online questionnaire. While this method is practical for assessing subjective perceptions, it is susceptible to biases such as social desirability and overgeneralization. Respondents might have reported more favorable experiences than they actually had, or their opinions could have been influenced by temporary emotions or recent interactions with the app. Moreover, the cross-sectional design captures only a single moment in time, preventing the observation of changing perceptions as users gain more experience or as e-commerce applications evolve.

Another limitation lies in the scope of variables considered. The research model focused exclusively on the six dimensions of the User Experience Questionnaire (UEQ), excluding other potentially relevant constructs such as trust, perceived value, emotional engagement, and loyalty intention. These unmeasured factors might indirectly influence satisfaction or mediate the relationships between UX and behavioral outcomes. Similarly, external factors—such as marketing communication, promotional strategies, and customer service quality—were not controlled for, which could have influenced user satisfaction beyond UX itself.

Finally, the study was conducted within the Indonesian context and focused mainly on dominant platforms like Shopee, Tokopedia, and Lazada. While this provides important regional insights, the results may not be generalizable to other countries where technological adoption, cultural attitudes, and e-commerce infrastructure differ. For instance, users in countries with higher digital maturity may prioritize innovation, while others emphasize security or trust. Recognizing these contextual and methodological limitations offers a foundation for improving future studies.

4.7. Future Research Directions

Future research should expand both the methodological and contextual scope of this study. Increasing the sample size and including respondents from more diverse backgrounds would improve generalizability. Extending the study to rural regions or different provinces could uncover variations in UX perception shaped by differences in digital literacy and internet accessibility. Comparative cross-national studies would also help identify cultural moderators influencing the relationship between UX and satisfaction, offering broader global perspectives.

Beyond cross-sectional surveys, adopting longitudinal or experimental designs could capture dynamic changes in UX perception over time. Researchers could measure satisfaction before and after major app updates or interface redesigns to assess causal effects. Combining self-reported questionnaires with behavioral methods such as usability testing, eye-tracking, or clickstream analysis would provide richer, objective evidence of how users interact with applications. Such approaches could bridge the gap between perceived and actual usability.

Another avenue for future work is to integrate additional psychological and technological constructs into the conceptual model. Variables such as perceived trust, enjoyment, engagement, emotional attachment, and technology readiness could be included to examine indirect and mediating pathways. Analytical techniques like Structural Equation Modeling (SEM) or Partial Least Squares (PLS) can test complex causal structures and moderation effects involving demographic or contextual variables. This would extend the theoretical understanding of UX beyond its immediate influence on satisfaction.

Lastly, future research should consider emerging technologies shaping user experience in digital commerce. Artificial intelligence (AI), augmented reality (AR), and conversational agents such as chatbots offer new layers of interactivity and personalization. Exploring how these innovations affect hedonic UX dimensions—such as stimulation, attractiveness, and novelty—would generate valuable insights for next-generation application design. Cross-platform comparisons between mobile and web-based shopping could also inform strategies for delivering consistent satisfaction across devices. Through these developments, future studies can advance both theory and practice, promoting a more comprehensive and adaptive model of UX in the digital economy.

5. Conclusion

This study examined the influence of user experience (UX) dimensions on user satisfaction in mobile e-commerce applications, using data collected from 100 active users in Indonesia. Employing the User Experience Questionnaire (UEQ) framework, six UX dimensions—Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, and Novelty—were analyzed through multiple regression. The results revealed that five of these dimensions significantly and positively affect user satisfaction, with Perspicuity and Efficiency emerging as the most influential factors. These findings indicate that users primarily value clarity, simplicity, and speed when engaging with e-commerce platforms, while hedonic qualities such as stimulation and attractiveness provide additional emotional reinforcement. The empirical results confirm that UX is a multidimensional construct combining pragmatic and hedonic qualities, both of which contribute to overall satisfaction. However, pragmatic factors—particularly ease of use, task efficiency, and system reliability—remain dominant in shaping user perceptions in Indonesia's digital market. The relatively weaker effect of Novelty suggests that while users appreciate innovation, they prioritize stability and convenience in their day-to-day transactions. This underscores the importance of maintaining a balance between design creativity and functionality to achieve sustainable user satisfaction and loyalty. Overall, the study contributes to the growing body of UX literature by providing empirical evidence from a developing market context. It reinforces the value of human-centered design as a strategic determinant of digital success. For practitioners, the findings highlight the need to optimize mobile interfaces for clarity, responsiveness, and dependability before investing in advanced aesthetic or innovative features. For academia, this research broadens the understanding of UX's role in shaping satisfaction and offers a basis for future exploration incorporating trust, emotional engagement, and emerging technologies.

6. Declarations

6.1. Author Contributions

Author Contributions: Conceptualization, A.D.S., R.E.T., and Y.S.W.; Methodology, A.D.S. and R.E.T.; Software, Y.S.W. and R.E.T.; Validation, R.E.T. and Y.S.W.; Formal Analysis, A.D.S.; Investigation, Y.S.W. and R.E.T.; Resources, R.E.T. and Y.S.W.; Data Curation, Y.S.W.; Writing—Original Draft Preparation, A.D.S.; Writing—Review and Editing, R.E.T. and Y.S.W.; Visualization, R.E.T. All authors have read and agreed to the published version of the manuscript.

6.2. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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6.4. Institutional Review Board Statement

Not applicable.

6.5. Informed Consent Statement

Not applicable.

6.6. Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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